

1 (cancelled).

1 2 (previously presented). A control system comprising:

2       a plurality of remotely located electrical switches wherein each remotely  
3       located electrical switch of said plurality of remotely located electrical switches  
4       performs a function of a separate, discrete system, at least one parameter of  
5       said separate, discrete system monitored by said control system, said control  
6       system comprising:

7               a cellular receiver and a cellular transmitter configured for  
8       communicating over control channels of a cellular network,

9               a microcomputer coupled to said cellular receiver and said cellular  
10      transmitter, and to a respective said remotely located electrical switch,

11               a sensor associated with said at least one parameter, said sensor  
12      coupled to said microcomputer,

13               said microcomputer responsive to incoming cellular signals received  
14      by said cellular receiver, and providing outgoing cellular signals to said  
15      transmitter, said incoming cellular signals and said outgoing cellular signals  
16      containing data associated with said remote electrical switch and said sensor,  
17      respectively,

18               a cellular link to the Internet,

19               a data center coupled to the Internet and configured for receiving said  
20      data from the Internet and transmitting said data to the Internet,

21               a user interface in said data center responsive to said data from said  
22      cellular transmitter and for inputting said data to said cellular receiver, and

23 providing control and monitoring of said plurality of remote electrical switches  
24 and said at least one parameter from said sensor.

1 3 (previously presented). A control system as set forth in claim 2 wherein said  
2 sensor includes said switch so that status of said switch is monitored.

1 4 (previously presented). A control system as set forth in claim 2 wherein said  
2 separate, discrete system further comprises groups of subsystems, each group  
3 of said groups of subsystems comprising at least one said remote electrical  
4 switch of said plurality of remote electrical switches and at least one said  
5 sensor, with a said cellular transmitter, a said cellular receiver and a said  
6 microprocessor coupled to monitor and control an associated said group.

1 5 (previously presented). A control system as set forth in claim 4 wherein said  
2 user interface further comprises a display of controls for said remote electrical  
3 switches and indications of said parameters organized so that said a said  
4 control for said switch and a said parameter associated with a said group  
5 containing said switch are correspondingly identified and grouped together on  
6 said display.

1 6 (previously presented). A control system as set forth in claim 4 wherein said  
2 remote electrical switch and said sensor in each said group of said groups of  
3 subsystems are identical, with said microprocessor programmed to respond to

4 a first unique cellular transmission from said control center and initiate a  
5 second unique cellular transmission to said control center.

1 7 (previously presented). A control system as set forth in claim 6 wherein said  
2 first unique cellular transmission energizes or wakes up said microprocessor  
3 and a following cellular data transmission from said control center provides  
4 instructions to said microprocessor.

1 8 (previously presented). A control system as set forth in claim 7 wherein said  
2 first unique cellular transmission is in the form of a MIN number and said  
3 following cellular data transmission is in the form of a MIN number, and said  
4 instructions cause a change of state of said switch.

1 9 (previously presented). A control system as set forth in claim 8 wherein said  
2 second unique cellular transmission is in the form of an electronic serial  
3 number of said cellular transmitter, said electronic serial number including  
4 information related to said sensor.

1 10 (previously presented). A control system as set forth in claim 9 wherein said  
2 separate, discrete system is a railroad switchyard comprising a plurality of  
3 railroad switches, each railroad switch of said plurality of railroad switches  
4 equipped with a pair of heaters for melting snow and ice, with a pair of  
5 energizing/deenergizing switches, each switch of said pair of

6 energizing/deenergizing switches coupled to energize and deenergize a  
7 respective heater of said pair of heaters responsive to said incoming cellular  
8 signals, and a pair of ON/OFF sensors, each sensor of said pair of ON/OFF  
9 sensors coupled to sense an energized or deenergized state of a respective said  
10 heater of said pair of heaters, each of said sensors providing an indication of  
11 said energized or deenergized state of a respective said heater to said  
12 microprocessor whereupon said indication is transmitted to said data center.

1 11 (previously presented). A control system as set forth in claim 10 wherein a  
2 single said group of said railroad switchyard comprises a said railroad switch,  
3 an associated said pair of heaters, an associated said pair of sensors, an  
4 associated said cellular transmitter and associated said cellular receiver and an  
5 associated said microprocessor.

1 12 (previously presented). A control system as set forth in claim 10 wherein  
2 said user interface in said data center provides a control for energizing and  
3 deenergizing each said pair of railroad heaters, either separately or together,  
4 and said parameter is an indication of said energized or deenergized state of  
5 each said heater as provided by a respective said sensor.

1 13 (previously presented). A control system as set forth in claim 12 wherein  
2 said sensor includes a sensor for monitoring an electrical current condition in  
3 each said heater wherein current flowing in each said heater is sampled to

- 4 determine an overcurrent or undercurrent condition in each said heater.
- 1 14 (previously presented). A system for energizing and deenergizing railroad  
2 switch heaters from a remote location and providing at least an indication of an  
3 energized or deenergized state of each said railroad switch heater, said system  
4 comprising:
  - 5 an electrical switch for each said switch heater, said electrical switch  
6 coupled to connect and disconnect electrical power to a respective said switch  
7 heater, and responsive to an electrical CONNECT signal and an electrical  
8 DISCONNECT signal to either connect or disconnect said electrical heater,
    - 9 at least one CONNECT/DISCONNECT sensor for each said electrical  
10 switch for providing at least an indication of an energized or deenergized state of  
11 a respective said switch heater,
    - 12 a cellular transmitter and a cellular receiver,
    - 13 a microprocessor responsive to said cellular transmitter and to said  
14 cellular receiver, and coupled to said electrical switch to trigger said electrical  
15 switch to a connected or disconnected state responsive to received cellular  
16 signals containing either a said CONNECT signal or a said DISCONNECT signal  
17 from said cellular receiver.
  - 1 15 (previously presented). A system as set forth in claim 14 wherein said  
2 remote location further comprises a computerized data center coupled to the  
3 Internet for relaying said CONNECT signal or said DISCONNECT signal.

1 16 (previously presented). A system as set forth in claim 15 wherein said data  
2 center further comprises a computer system including computer monitors  
3 upon which displays relating to status and operation of each said electrical  
4 switch and status and operation of each said electrical heater are monitored.

1 17 (previously presented). A system as set forth in claim 15 wherein said  
2 cellular transmitter and said cellular receiver communicate via control  
3 channels of the cellular system.